Enhancing patient safety in rapid tranquillisation (RT) in Accident and Emergency (A&E) department, Changi General Hospital (CGH) through implementation of inter-professional initiatives and audit

**RESULTS**

**Performance Standard 1 (Doses)**

| Compliance rate | 74/86 (86%) |

**Performance Standard 2 (Route)**

| Compliance rate | 81/86 (94%) |

The compliance rate of psychotropic medication prescribed in relation to dosage regimen in the revised policy was 74/86 (86%). The remaining 12/86 (14%) of psychotropic medication prescriptions had exceeded the maximum single dose recommendation in the revised policy. Among these 14% of prescriptions, 2 patients received a total daily dose that exceeds the daily dose recommendation in the revised policy. The psychotropic medication involved was diazepam.

**Figure 3: Proportion of psychotropic medication prescriptions where the dosage regimen were in line with revised policy**

**Figure 4: Proportion of psychotropic medication prescriptions where the route of administration were in line with revised policy**

The audit results revealed that the dosage and route of administration of rapid tranquillisation medications in A&E department were complied with at 86% and 94% respectively. This suggests reasonable good practice being adopted in A&E department in CGH.

**Performance Measurement**

**NO RT-associated complication observed**

**CONCLUSION**

- Abstain from haloperidol intravenous prescriptions
- Awareness sessions to both medical and nursing staff regarding patient safety in RT
- Re-audit will be conducted with staff training embedded into interventions for improvement.

**Aims**

To assess the prescribing patterns of psychotropic medication used in RT in A&E department and concordance with the revised policy performance standards.

**Performance Standards**

1. Doses of parenteral diazepam, lorazepam, midazolam, haloperidol and ketamine should be in line with the revised policy.
2. Route of administration of psychotropic medications should be in line with the revised policy.

**Performance Measurement**

Presence of rapid tranquillisation associated serious complications within 24 hours for all psychotropic medications (Except diazepam, within 72 hours, due to the long half-life of the drug).

**Methods**

A retrospective cohort audit from 1st October – 31st December 2017 in CGH.

**Inclusion Criteria**

All A&E patients aged ≥ 21 years old who were administered rapid tranquillisation for management of acute behavior disturbance.

**Data Collection**

Relevant data was extracted from electronic and paper medical records by a study pharmacist. To ensure integrity of data collection, data quality check of 10 patients were conducted by the study psychiatrists and another pharmacists involved.

**Data Analysis**

Descriptive data was used and data analysis was performed using Statistical Package for the Social Science (SPSS) Statistic version 22.

52 patients (86 electronic rapid tranquillisation prescriptions) were included.

**Results**

**Table 1: Patient's demographic**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number of patients, n=52</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender, (%)</td>
<td>31 (59.6%)</td>
</tr>
<tr>
<td>Mean age, (SD)</td>
<td>53 (19.6)</td>
</tr>
<tr>
<td>Ethnicity, (%)</td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>38 (73.1%)</td>
</tr>
<tr>
<td>Malay</td>
<td>6 (11.5%)</td>
</tr>
<tr>
<td>Indian</td>
<td>3 (5.8%)</td>
</tr>
<tr>
<td>Others</td>
<td>5 (9.6%)</td>
</tr>
<tr>
<td>Place of residences, (%)</td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>45 (86.5)</td>
</tr>
<tr>
<td>Nursing home (Institutional care)</td>
<td>2 (3.8)</td>
</tr>
<tr>
<td>Others eg. prison, travellers</td>
<td>5 (9.6)</td>
</tr>
</tbody>
</table>

**Figure 2: Summary of psychotropic medication prescriptions**

- Ketamine, 7, 8%
- Haloperidol, 21, 24%
- Lorazepam, 1, 1%
- Midazolam, 42, 49%
- Diazepam, 15, 18%

**Figure 1: Patient’s demographic**

**Figure 3: Proportion of psychotropic medication prescriptions where the dosage regimen were in line with revised policy**

- Diazepam, 15 Lorazepam, 1 Midazolam, 42 Haloperidol, 21 Ketamine, 7

**Figure 4: Proportion of psychotropic medication prescriptions where the route of administration were in line with revised policy**

- Intramuscular (IM) route
- Intravenous (IV) route
- IV and IM route where the proportion of psychotropic medication prescriptions was met.
- IV and IM route where the proportion of psychotropic medication prescription was not met.

Majority of the psychotropic medications were prescribed in intravenous (IV) route, 64/86 (74%) vs intramuscular (IM) route, 22/86 (26%). The compliance rate of psychotropic medications in relation to route of administration was 81/86 (94%). Non compliance to the revised policy was noted only in 5 haloperidol orders. IV haloperidol was discouraged from use due to high risk of developing QT prolongation and Torsades de pointes.

**Summary**

- Area of improvement/future work:
  - Abstain from haloperidol intravenous prescriptions
  - Awareness sessions to both medical and nursing staff regarding patient safety in RT
  - Re-audit will be conducted with staff training embedded into interventions for improvement.